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NIELDS & LEMACK 176 EAST MAIN STREET, SUITE 7 WESTBORO, MA 01581			EXAMINER BELLAMY, TAMIKO D	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/540,590	Applicant(s) THOMPSON ET AL.	
	Examiner Tamiko D. Bellamy	Art Unit 2856	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 March 2007.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 5-9, 11-27, 32 and 33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-9, 11-27, 32 and 33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 4) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. The drawings were received on 3/2/07. These drawings are objected.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: **29 (See Specification pg. 14, line 7)**. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **center of buoyancy and the center of gravity are separated from one another along the axis** must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet"

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pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **display for displaying the presence of leaks (See claim 27)** must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **emitters and/or detectors along**

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**the pipe (See claim 25)** must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "5" and "9" have both been used to designate as a pill (See fig. 4).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37

CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

7. The disclosure is objected to because of the following informalities:
  - a. Specification Pg, 14, line 7, change “figure 6” to either –figure 1--, or –figure 4--.Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 5, 9, 11, 17-19, 21, 22, 32, and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Mizuochi (JP62025229A).

Re claim 1, as depicted in fig. 1, Mizuochi discloses a housing (e.g., pig body 2) capable of traveling in a pipeline (1). Mizuochi discloses a housing (e.g., pig body 2) accommodating a, hydrophone (e.g., sensor (3) catching a leak sound), a timer (5) and a memory (e.g., storage device 7). Mizuochi discloses the hydrophone (3) and the timer (5) are capable of generating an output and the memory (e.g., storage device 7) is capable of recording the hydrophone output with reference to the timer output (abstract). As

depicted in fig. 1, Mizuochi discloses the device (2) is shaped and sized to travel in flow of fluid through pipeline (1) having substantially neutral buoyancy (e.g., pig (2) travels in pipeline (1) when it fed by applying liquid pressure) in the fluid passing through the pipeline (1) (See abstract).

Re claim 5, as depicted in fig. 1, Mizuochi discloses the housing (e.g., pig body 2) is spherical.

Re claim 9, Mizuochi discloses the hydrophone (3) and the timer output (5) are recorded (e.g., storage device 7) as the device (2) passes through the pipeline (1).

Re claim 11, Mizuochi discloses determining a leak and locating the position of the leak (See last 4 lines of abstract).

Re claim 17, as depicted in fig. 1, Mizuochi discloses inserting a self-contained leak location device (e.g., pig body 2) capable of detecting noise (e.g., sensor (3) catching a leak sound) and recording (e.g., storage device 7) the occurrence of noise. Mizuochi discloses allowing the leak device (2) to travel through the pipeline (1). Mizuochi discloses recording the time (5) of the noise. As depicted in fig. 1, Mizuochi discloses the device (2) is shaped and sized to travel in flow of fluid through pipeline (1) having substantially neutral buoyancy in the fluid passing through the pipeline (e.g., pig (2) travels in pipeline (1) when it fed by applying liquid pressure) (See abstract).

Re claim 18, Mizuochi discloses retrieving the leak location device (2) from the pipeline (1).

Re claim 19, Mizuochi discloses downloading the recording instances of noise along with the time (5) at which they were detecting onto a computer device (e.g., processor 6).

Re claim 21, Mizuochi discloses tracking the position of the leak detection as it travels through the pipeline (See last 4 lines of abstract).

Re claim 22, Mizuochi discloses tracking is achieved by causing the leak detection device (e.g., sensor (3) catches leak sounds) to emit a signal (e.g., generating an inspection signal) continuously on receipt of a signal.

Re claim 32, as depicted in fig. 1, Mizuochi discloses the leak detection device (e.g., sensor (3) catching leak sound) is used in conjunction with a computing means (e.g., processor 6) used to process data collected by the device (3).

Re claim 33, Mizuochi discloses the leak detection device (3) and the computing means (e.g., processor 6) are arranged to such that the data may be downloaded from the leak detection device (3) to the computing means (6).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2, 3, 6-8, 20, 23, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuochi (JP62025229A).



Re claim 2, as depicted in fig. 1, Mizuochi discloses a housing (e.g., pig body 2). While Mizuochi does not specifically disclose that the housing comprises a resilient outer surface, the court held in In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960), that the selection of a known material based upon its suitability for the intended use is a design consideration within the skill of the art. Therefore, to employ Mizuochi on a housing with a resilient outer surface would have been obvious to one of ordinary skill in the art at the time of the invention since this reference explicitly teaches a housing that fed through a pipeline by applying liquid pressure.

Re claim 3, Mizuochi discloses inserting the device into the pipeline (2). While Mizuochi does not specifically disclose that the device is inserted and/or retrieved using a standard fitting, the device (2) of Mizuochi would operate as equally as well. Evidence of this can be found in Mizuochi that discloses inserting the device into the pipeline (See line last 2 lines of 1<sup>st</sup> par. of abstract). The functionality of the device (2) does not change regardless if inserted into a fitting or not. Therefore, to employ Mizuochi on inserting the device into a pipeline using a standard fitting would have been obvious to one of ordinary skill in the art at the time of the invention since this reference explicitly teaches inserting the device into a pipeline.

Re claim 6, as depicted in fig. 1, Mizuochi discloses the housing (2) is a spherical. While, Mizuochi lacks the detail of a oval housing, the court held in, In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966), that a change in the shape of a prior art device is a design consideration within the skill of the art. Therefore, to employ Mizuochi on a

housing that is oval would have been obvious to one of ordinary skill in the art at the time of the invention since this reference explicitly teaches a housing that is rectangular.

Re claim 7, as depicted in fig. 1, Mizuochi discloses the device (2) is arranged such that the center of buoyancy and the center of gravity lie on its long axis.

Re claim 8, as depicted in fig. 1, Mizuochi discloses the device (2) is arranged such that the center of buoyancy and the center of gravity are separated from one another along the axis.

Re claim 23, Mizuochi discloses inserting the device into the pipeline (2). While Mizuochi does not specifically disclose that the device is inserted and/or retrieved using a standard fitting, the device (2) of Mizuochi would operate equally as well. Evidence of this can be found in Mizuochi that discloses inserting the device into the pipeline (See line last 2 lines of 1<sup>st</sup> par. of abstract). The functionality of the device (2) does not change regardless if inserted into a fitting or not. Therefore, to employ Mizuochi on inserting the device into a pipeline using a standard fitting would have been obvious to one of ordinary skill in the art at the time of the invention since this reference explicitly teaches inserting the device into a pipeline.

Re claim 27, Mizuochi discloses the leak location device (2) that collects acoustic data and emits a signal to a signal processor (6). Mizuochi discloses that leak information, acceleration information, and records of time are read out the storage device (7) to calculating the leak position (See last 4 lines of abstract). While Mizuochi does not specifically disclose that the data is compared to predetermined data indicative of a leak, the processor that Mizuochi uses can easily be manipulated to compare the signal

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received from the leak detector (3) to predetermined data to indicate a leak. Therefore, to employ Mizuochi on data is compared to predetermined data indicative of a leak would have been obvious to one of ordinary skill in the art at the time of the invention since this reference explicitly teaches inserting the device into a pipeline.

12. Claims 12-16, and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuochi (JP62025229A) in view of Guest (3,691,819).

Re claims 12-16, Mizuochi discloses a leak detection device (2). Mizuochi lacks the detail of the device comprising an electromagnetic transmitter. Guest discloses a leak location device (e.g., pig 10) comprising a transmitter (e.g. transmit-receive switch 64) Col. 5, lines 48-67; Col. 6, lines 1-22). Therefore, to modify Mizuochi by employing an electromagnetic transmitter would have been obvious to one of ordinary skill in the art at the time of the invention since Guest teaches a leak detection device having theses design characteristics. The skilled artisan would be motivated to combine the teachings of Mizuochi and Guest since Mizuochi states that his invention is applicable to leak detection device and Guest is only used to provide the added limitation of the leak detection device comprising a transmitter.

Re claims 24-26, Mizuochi discloses a leak detection device (2). Mizuochi lacks the detail of electromagnetic transmitters at points along the pipe. As depicted in figs 1 and 2, Guest discloses an emitter/transmitter (58) along a pipeline (12). While Guest does not disclose more than one **emitter** the court held in, In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960, that the duplicating the components of a prior art device is a design consideration within the skill of the art. Therefore, to modify Mizuochi by

employing emitters and/ or detectors at points along the pipe would have been obvious to one of ordinary skill in the art at the time of the invention since Guest teaches a leak detection device having these design characteristics. The skilled artisan would be motivated to combine the teachings of Mizuochi and Guest since Mizuochi states that his invention is applicable to leak detection device and Guest is only used to provide the added limitation of the leak detection device comprising emitters/transmitters.

***Claim Rejections - 35 USC § 102***

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 1, 5, 9, 11, 17-19, 21, 22, 32, and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Mitsuoka (JP58042946A).

Re claim 1, as depicted in fig. 1, Mitsuoka discloses a housing (e.g., pig unit bodies 2A-2C) capable of traveling in a pipeline (1). Mitsuoka discloses a housing (2A-2C) accommodating a, hydrophone (e.g., ultrasonic wave microphone 8), a timer (13) and a memory (e.g., memory circuit 15). Mitsuoka discloses the hydrophone (8) and the timer (13) are capable of generating an output and the memory (15) is capable of recording the hydrophone output with reference to the timer output (See last 7 lines of abstract). As depicted in fig. 1, Mitsuoka discloses the device (2A-2C) is shaped and

sized to travel in flow of fluid through pipeline (1) having substantially neutral buoyancy in the fluid passing through the pipeline (1).

Re claim 5, as depicted in fig. 1, Mitsuoka discloses the housing (e.g., pig unit 2A-2C) is spherical.

Re claim 9, Mitsuoka discloses the hydrophone (8) and the timer output (13) are recorded (e.g., memory circuit 15) as the device (2A-2C) passes through the pipeline (1).

Re claim 11, Mitsuoka discloses the determining there is a leak and locating the position of the leak (See last 7 lines of abstract).

Re claim 17, as depicted in fig. 1, Mitsuoka discloses inserting a self-contained leak location device (e.g., pig unit 2A-2C) capable of detecting noise (e.g., ultrasonic wave microphone) and recording (e.g., memory circuit 15) the occurrence of noise. Mitsuoka discloses allowing the leak device (2A-2C) to travel through the pipeline (1). Mitsuoka discloses recording the time (13) of the noise. As depicted in fig. 1, Mitsuoka discloses the device (2A-2C) is shaped and sized to travel in flow of fluid through pipeline (1) having substantially neutral buoyancy in the fluid passing through the pipeline (e.g., pig (2) travels in pipeline (1) when it fed by applying liquid pressure) (See abstract).

Re claim 18, Mitsuoka discloses retrieving the leak location device (2A-2C) from the pipeline (1).

Re claim 19, Mitsuoka discloses downloading the recording instances of noise along with the time (13) at which they were detecting onto a computer device (e.g., control circuit).

Re claim 21, Mitsuoka discloses tracking the position of the leak detection as it travels through the pipeline (See last 7 lines of abstract).

Re claim 22, Mitsuoka discloses tracking is achieved by causing the leak detection device (8) to emit a signal (e.g., detection signal) continuously on receipt of a signal.

Re claim 32, as depicted in fig. 1, Mitsuoka discloses the leak detection device (8) is used in conjunction with a computing means (e.g., control circuit) used to process data collected by the device (8).

Re claim 33, Mitsuoka discloses the leak detection device (8) and the computing means (e.g., control circuit) are arranged to such that the data may be downloaded from the leak detection device (8) to the computing means (e.g., control circuit).

***Response to Arguments***

15. Applicant's arguments with respect to claims 1-6, and 17-19 have been considered but are moot in view of the new ground(s) of rejection. It is the examiners position that claims 1-3, 5-9, 11-27, 32, and 33 are not patentable in view of the newly applied art of Mizuochi (JP62025229A), and Mizuochi (JP62025229A) in view of Guest (3,691,819). Claims 1, 5, 9, 11, 17-19, 21, 22, 32, and 33 are not patentable in view of the newly applied art of Mitsuoka (JP58042946A).

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*Conclusion*

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamiko D. Bellamy whose telephone number is (571) 272-2190. The examiner can normally be reached on Monday - Friday 7:30 AM to 3:30 PM.

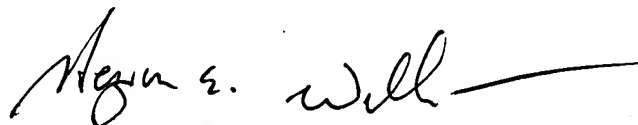
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tamiko Bellamy

T.B.

May 17, 2007



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